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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/522,062	01/21/2005	Hiroshi Koyama	3273-0197PUS1	6946
2292	7590	01/19/2006	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			HU, HENRY S	
			ART UNIT	PAPER NUMBER
			1713	
DATE MAILED: 01/19/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/522,062

Applicant(s)

KOYAMA ET AL.

Examiner

Henry S. Hu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on IDS of April 21, 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2 pages</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. It is noted that USPTO has received two **IDS** filed on January 21, 2005 and April 21, 2005 respectively. **Claims 1-4 are now pending** with two independent claims (Claim 1 and Claim 2). An action follows.

Specification

2. The disclosure is objected to because of the following informalities:

On **page 13** at lines 13-15 and may be throughout the specification, all three recitations including "2-trifluoromethyl", "2-tetrahydropiranyl" and "2-tetrahydrofranyl" are improper according to traditional writing. The Examiner suggests changing to "**2-trifluoromethyl**", "**2-tetrahydropyranyl**" and "**2-tetrahydrofuranlyl**" to be consistent with the same wording used on lines 4, 5 and 20.

Appropriate corrections are required.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van*

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Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. **Claims 1-2** are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over **Claims 1-5** of copending Application No. **10/231,115 to Ishil et al.** (now **USPG-PUB 2003/0083529 A1** with the same assignee and a US filing date of August 30, 2002, but with **different inventor entities**).

This is a provisional obviousness-type double patenting rejection since the conflicting claims have not yet been patented. Although the conflicting claims are not identical, they are not patentably distinct from each other. The subject matter claimed in the instant application is obviously disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows:

Parent **Claim 1** of present application relates to a monomer of 6-trifluoromethyl-2-vinyloxy-4-oxatricyclo[4.2.1.0^{3,7}]nonan-5-one having formula (1). Other parent **Claim 2** relates to a process for producing such a monomer of Claim 1, comprising the step of reacting 6-trifluoromethyl-2-hydroxy-4-oxatricyclo[4.2.1.0^{3,7}]nonan-5-one having formula (2) with a compound having a formula from (3a) or (3b), wherein R^a and R^b are each a hydrogen atom or a hydrocarbon group.

In a close examination, **Claims 1-5** in copending Application No. **10/231,115 to Ishil et al.** relate to a process for producing vinyl ether compounds by the same chemical reaction (see Claim 1 on page 15). **One of many monomers # (11)** in the formula (4) of Claim 5 would be reading on the claimed monomer of parent Claims 1 and 2 when **X⁷ factor is trifluoromethyl (CF₃) group located on the bridge carbon next to keto group, n factor of W (in formula (4)) is 0, and g factor is an integer of 1.** It is noted that trifluoromethyl (CF₃) group is indeed a species of haloalkyl group as known in the art (page 2, paragraph 0019 at line 4). Therefore, both applicants are not patentably distinct and an **ODP rejection** is applied.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. *The limitation of parent Claim 1 relates to 6-trifluoromethyl-2-vinyloxy-4-oxatricyclo[4.2.1.0^{3,7}]nonan-5-one represented by formula (1).*

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Other parent Claim 2 relates to a process for producing a 6-trifluoromethyl-2-vinyloxy-4-oxatricyclo[4.2.1.0^{3,7}]nonan-5-one of Claim 1, comprising the step of reacting 6-trifluoromethyl-2-hydroxy-4-oxatricyclo[4.2.1.0^{3,7}]nonan-5-one of formula (2) with a compound of formula (3a) or (3b), wherein R^a and R^b are each a hydrogen atom or a hydrocarbon group. See other limitations of dependent Claims 3-4.

7. Claims 1-4 are rejected under 35 U.S.C. 102(e) as being anticipated by Ishil et al. (USPG-PUB 2003/0083529 A1).

8. Claims 1-4 are rejected under 35 U.S.C. 102(a) as being anticipated by Ishil et al. (EP 1,288,186 A2 ~~A1~~) or Ishil et al. (JP 2003/073321).

Regarding the limitation of parent **Claims 1 and 2** for above two types of 102 rejections, Ishil et al. in each of US, EP and JP patents have disclosed a process for producing vinyl ether compounds by the same chemical reaction (see Claim 1 on page 15). One of many monomers # (11) in the formula (4) of Claim 5 would be reading on the claimed monomer of parent Claims 1 and 2 when **X⁷ factor is trifluoromethyl (CF₃) group located on the bridge carbon next to keto group, n factor of W (in formula (4)) is 0, and g factor is an integer of 1**. It is noted that trifluoromethyl (CF₃) group is indeed a species of haloalkyl group as known in the art (page 2, paragraph 0019 at line 4). Therefore, Ishil anticipates the limitation of both two independent Claims 1 and 2.

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9. Regarding **Claim 3**, Ishil has already disclosed applying such a vinyl ether monomer to make polymers or copolymers so as to be useful as resist resins, optical plastics, transparent resins, and crosslinking resins (page 10, paragraph 0106).

Regarding **Claim 4**, co-monomer(s) having acid-elimination function may be used in making copolymer so as to be useful as resist resins, optical plastics, transparent resins, and crosslinking resins. For instance, Ishil has already disclosed making such a monomer of **t-butyl 3-vinyloxyadamantane-1-carboxylate**, which is carrying tert-butyl group in working example # 25 (see page 12, paragraph 0141).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishil et al. (USPG-PUB 2003/0083529 A1, EP 1,288,186 A2 A1 or JP 2003/073321), each individually in view of Mizutani et al. (US 6,939,662 B2).

The discussion of the disclosures of the prior art of Ishil for Claims 1-4 of this office action is incorporated here by reference. Regarding the limitation of parent **Claims 1 and 2**, **Ishil** in each of US, JP and EP patents has disclosed the preparation for producing vinyl ether monomers by the same chemical reaction (see Claim 1 on page 15). It is noted that trifluoromethyl (-CF₃) group is indeed a species of haloalkyl group as known in the art (page 2, paragraph 0019 at line 4).

12. Although some of many monomers # (11) in the formula (4) of Claim 5 may be “almost” or nearly reading on the claimed monomer of parent Claims 1 and 2, but only with the following four conditions as a combination: **(A) when X⁷ factor is trifluoromethyl (-CF₃) group, (B) such a X⁷ is located on the bridge carbon next to keto group, (C) n factor of W (in formula (4)) is 0, and (D) g factor is an integer of 1.** However, only one option is existed when all the four factors are met the requirements at the same time; the chance is thereby rare. Therefore, Ishil may be silent about monomer **having trifluoromethyl (-CF₃) group being located next to the bridge carbon next to keto group.** Mizutani et al. have taught such an arrangement in making fluorinated monomers (see column 5, line 30; column 16, line 1-65; column 17, line 1-

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15; column 19, line 1-65; and column 22, line 1-65). By doing so, the polymers obtained from such a monomer would be useful for making a **positive-working resist composition** (abstract, line 1-6).

13. In light of the fact that both references are preparing alicyclic norborane-derived monomers specifically having keto next to the bridged carbon atom and it may be used to make resins for the same or similar application, one having ordinary skill in the art would therefore have found it obvious to chemically modify the composition of Ishil's **monomer (# 11)** by selecting **trifluoromethyl (-CF₃) group** (from many of his options) **and specifically attaching -CF₃ to be located next to the bridge carbon** (which is next to keto group) as taught by Mizutani. By this modification, one would expect to obtain a better and more diversified fluorinated monomer and copolymer(s) with improved optical transparent properties to be excellent in making a positive-working resist composition.

14. Regarding **Claim 3**, Ishil has already disclosed applying such a vinyl ether monomer to make polymers or copolymers so as to be useful as resist resins, optical plastics, transparent resins, and crosslinking resins (page 10, paragraph 0106).

Regarding **Claim 4**, co-monomer(s) having acid-elimination function may be used in making copolymer so as to be useful as resist resins, optical plastics, transparent resins, and crosslinking resins. For instance, Ishil has already disclosed making such a monomer of **t-butyl**

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3-vinyloxyadamantane-1-carboxylate, which is carrying **tert-butyl** group in working example # **25** (see page 12, paragraph 0141).

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicants' disclosure. The following references relate to a vinyl ether monomer of 6-trifluoromethyl-2-vinyloxy-4-oxatricyclo[4.2.1.0^{3,7}]nonan-5-one and its making:

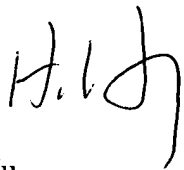
Ando et al. in **Journal of Photopolymer Science and Technology**, 16(4), pp 537-544, (2003) (but with a publication date of **July 15, 2003**) have disclosed the introduction of -F or -CF₃ onto alicyclic compounds would certainly reduce absorption and thereby increase optical transparency; the addition of ether does not affect the absorbance, but **the addition of -CF₃ at 2-position significantly decreases the absorbance** (abstract, line 5-9; also see Figures 12B, 13B and 14A; page 542, see paragraph 3.6). However, the reference has a **publication date of July 15, 2003**, which is later than July 7, 2003 of instant application. Additionally, no vinyloxy group is attached.

16. Any inquiry concerning this communication or earlier communication from the examiner should be directed to **Dr. Henry S. Hu** whose telephone number is **(571) 272-1103**. The examiner can be reached on Monday through Friday from 9:00 AM –5:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (571) 272-1114. The **fax** number for the organization where this application or proceeding is assigned is **(571) 273-8300** for all regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Henry S. Hu

Patent Examiner, art unit 1713, USPTO

January 12, 2006



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